Acta Odontol Scand. 2003 Dec;61(6):321-30. Related Articles, Links

Comment in:

- Acta Odontol Scand. 2004 Apr;62(2):116; author reply 117.
- Evid Based Dent. 2004;5(4):92.

Caries-preventive effect of fissure sealants: a systematic review.

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The objectives of this study were to evaluate systematically the evidence of the caries-preventive effect of fissure sealing of occlusal tooth surfaces and to examine factors potentially modifying the effect. The search strategies included electronic databases, reference lists of articles, and selected textbooks. Inclusion criteria were randomized or quasi-randomized clinical trials or controlled clinical trials comparing fissure sealing with no treatment or another preventive treatment in children up to 14 years of age at the start; the outcome measure was caries increment; the diagnostic criteria had been described; and the follow-up time was at least 2 years. Inclusion decisions were taken and grading of the studies was done independently by two of the authors. The main measure of effect was relative risk reduction. Thirteen studies using resin-based or glass ionomer sealant materials were included in the final analysis. The results showed that most studies were performed during the 1970s and a single application had been utilized. The relative caries risk reduction pooled estimate of resin-based sealants on permanent 1st molars was 33% (relative risk = 0.67; CI = 0.55-0.83). The effect depended on retention of the sealant. In conclusion, the review suggests limited evidence that fissure sealing of 1st permanent molars with resin-based materials has a caries-preventive effect. The evidence is incomplete for permanent 2nd molars, premolars and primary molars and for glass ionomer cements. Overall, there remains a need for further trials of high quality, particularly in child populations with a low and a high caries risk, respectively.